Mathematics Toolkit: Grade 5 Objective 2.B.1.a

Standard 2.0 Knowledge of Geometry

Topic B. Solid Geometric Figures

Indicator 1. Analyze the properties of solid geometric figures

Objective a. Identify and classify pyramids and prisms by the number of edges, faces, or vertices

Assessment Limits:

Use triangular pyramids, rectangular pyramids, triangular prisms, or rectangular prisms

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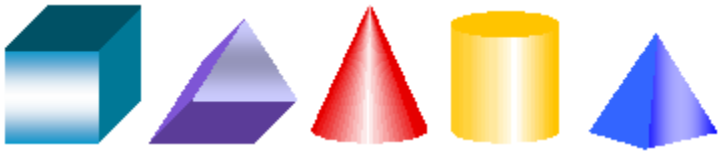
Objective 2.B.1.a Tools

Clarification

Mathematics Grade 5 Objective 2.B.1.a Assessment Limit 1

In working with geometric solids, students should have the opportunity to group certain solids in various ways. At this time, students have examined

- Cubes (Special rectangular prisms where all the faces are squares)
- Rectangular prisms
- Triangular prisms
- Cones
- Cylinders
- Pyramids



Classroom Example 1

Sorting Solid Figures by Characteristics

Working in pairs, sort the solids into groups in two different ways. You might group the solids into

- Rectangular prisms, triangular prisms and pyramids (Polygon faces and polygon bases)
- Cylinders, cones (Circle bases)

Or

- Rectangular prisms, triangular prisms, and cylinders (Two bases)
- Cones and pyramids (One base)

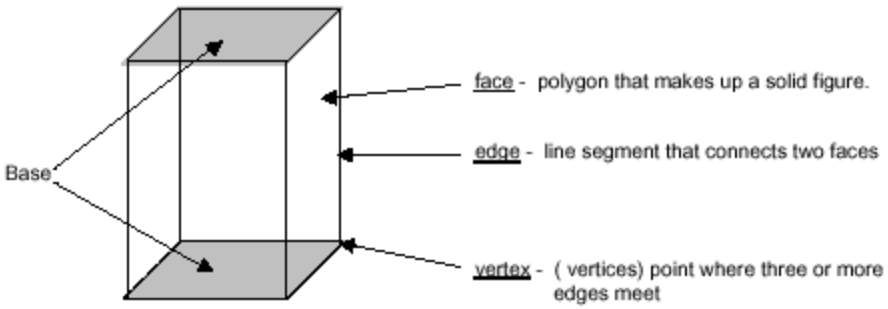
Classroom Example 2

Describing Solid Figures by Characteristics

Describe each shape by identifying and counting the vertices, faces and bases of each solid. Demonstrate and count the vertices, faces and bases with solid models.

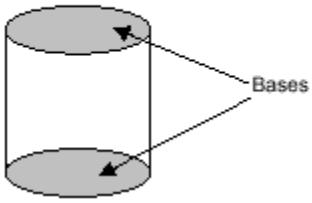
Develop the meaning of "face", "edge", "vertex" and "base(s)".

Rectangular Prism



In a rectangular prism, any face may be selected to be the base. The face parallel to that base is also a base.

Cylinder



The cylinder has no edges or vertices. It has two faces (bases) that are circles.

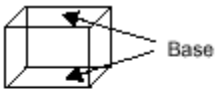
Classroom Example 3

Naming Pyramids and Prisms

A pyramid is a solid geometric figure that has one face, the base, which can be any polygon. All the other faces are triangles and join at one vertex.

A prism is a solid geometric figure with two congruent parallel faces called bases. The bases may be any polygon. The other faces are rectangles.

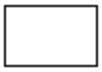
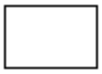
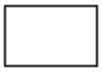
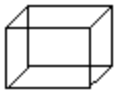
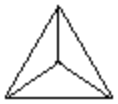
Pyramids and prisms are named by their base(s).
Name and classify pyramids and prisms by their bases.



The base is a rectangle. The name of the prism is a **rectangular** prism.

The base is a triangle. The name of the pyramid is a **triangular** pyramid.

Faces, Bases and Names of Prisms and Pyramids

Name	Shape of faces	Shape of base(s)	Picture of
Rectangular pyramid			
Rectangular prism			
Triangular pyramid			
Triangular prism